

A PSYCHOMETRIC STUDY OF THE FAMILY ADAPTABILITY
AND COHESION EVALUATION SCALES

BY

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The Family Adaptability and Cohesion Evaluation Scales, a measure of family functioning derived from the theory of structural family therapy, contains three scales: cohesion, adaptability and social desirability. These were slightly modified, based on data from a pilot study, in order to make them easier to read. The modified questionnaire (FACES-R) was then administered to members of 206 non-clinic families and 42 families being seen in a mental health clinic.

The psychometric properties of the three scales were then examined. Sample characteristics, scale reliability and validity, and the normative properties of the scales were discussed. Comparisons with other studies were done where data were available.

Support for the scales was found in high alpha coefficients of reliability and the similarity of the present

sample means and standard deviations to those of two other samples. Intercorrelations between family members' scores also moderately supported the reliability of the cohesion but not the adaptability scale. Factor analyses of the scales did not replicate that done by either Olson et al. or Portner but did fit with the Circumplex Model since each scale factored with one bipolar factor. The validity of the scales was not supported.

The adaptability and cohesion scales correlated significantly with each other and cohesion correlated significantly with social desirability. Therapists' ratings also did not correlate with the scale scores. An analysis of covariance controlling for SES found no effect for SES and no differences between groups on cohesion or adaptability. There were group differences for social desirability. While chi-square analyses of group differences lend minimal support for the cohesion and social desirability scales' ability to discriminate between the clinic and non-clinic groups, factor analyses suggest that these differences are due only to social desirability.

Attempts to improve the scales were made with results consistently indicating that the only dimension being tapped by the FACES-R scales is social desirability. Implications of these findings were discussed in light of the Circumplex Model.

CHAPTER I MODELS OF THE FAMILY

Introduction

In the past, the primary focus of investigators interested in assessing psychopathology was the individual and his personality "traits" which were thought of as invariant. The advent of behaviorism, however, made psychologists aware of the impact of a person's environment and the possibility of interaction effects between the individual and his environment. Thus, there has been a shift in attention from the individual to the larger interpersonal context in which the person functions. This has resulted in a large number of clinicians and researchers focusing on the family as being of primary importance. Most family investigators feel that there are family patterns and processes crucial to understanding the development of pathology within individual family members. It is the belief of a number of the theorists, researchers and therapists that the family is a basic unit of psychopathology. This new focus has resulted in a sizeable body of literature concerned with family functioning which seeks to identify the family "types" comprising healthy and unhealthy systems. Unfortunately, most of the research with couples and families has not tested hypotheses that are

considered therapeutically relevant (Olson, Russell, & Sprenkle, 1980). Additionally, most of the outcome studies of family therapy have not been theoretically based (Gurman & Kniskern, 1978). Integration of research, theory and practice has rarely been attempted. Reviewers of family interaction research (Jacob, 1975; Riskin & Faunce, 1972) and of family therapy outcome studies (DeWitt, 1978; Masten, 1979; Wells & Dezen, 1978; Wells, Dilkes, & Trivelli, 1972) agree, however, that methodological problems, including the lack of reliable and valid measurement, have prevented both researchers and family therapists from adequately assessing both their hypotheses and treatment efforts. This lack of adequate methodology has had a part in preventing the integration of theory and research to bring about advances in therapeutic techniques. Therapists do not engage in objective diagnostic evaluations because there is a scarcity of techniques that have been adequately tested or validated that also yield useful information (Cromwell, Olson, & Fournier, 1976).

The following is a brief discussion of two models of the family that have influenced the work of family therapists in recent years. The Structural Model (Minuchin, Rosman, & Baker, 1978), and the Circumplex Model (Olson, Sprenkle, & Russell, 1979) have both evolved from a systems perspective influenced a great deal by the work of Von Bertalanffy (1968).

The Structural Model

This model of family intervention has been most completely developed by Salvador Minuchin and his colleagues at the Philadelphia Child Guidance Clinic. Here the focus of intervention is the structural patterns that are maladaptive for the system. Structure in healthy families is thought to be hierarchical yet flexible, with the parents allied at the top of the hierarchy. Analysis of the family structure consists of examining the patterns of alliances or coalitions between members and their "rules" governing boundaries. For example, there are four transactional patterns felt to be characteristic of a family process that encourages somatization (Minuchin et al., 1978). These are enmeshment, overprotectiveness, rigidity and lack of conflict resolution. Enmeshment refers to a condition where subsystem boundaries (e.g., the spouse relationship) are poorly differentiated, weak and easily crossed by other family members. Overprotectiveness is a high degree of concern for each other's welfare to the extent that nurturant acts are constantly elicited and provided. Rigid families are those in which very little change in transactional patterns occurs despite the ineffectiveness of existing ones. Lack of conflict resolution does not mean that conflict does not exist but rather that the family avoids or diffuses conflict, often at the expense of the symptomatic individual.

Minuchin et al. (1978) have done some work to test this model with diabetics and anorectics. They used two behavioral measures, a Diagnostic Interview and a Family Task, with various target behaviors operationally defined. Unfortunately, these measurement devices have not been published and it is unclear whether there is any support for their reliability or validity. It is thus impossible to evaluate objectively Minuchin's claim that the Structural Model is supported by research findings.

The Circumplex Model

This model, developed by Olson et al. (1979, 1980), hypothesizes that cohesion and adaptability are two independent dimensions underlying family functioning which emerge through an "inductive conceptual clustering" from a survey of the family literature across all disciplines (Olson et al., 1979). Family cohesion is defined by two components: the emotional bonding members have with one another and the degree of individual autonomy a person experiences in the family system. Enmeshment and disengagement (used as in Minuchin's model) are seen as two extremes of cohesion with a balance of cohesion being the most conducive to effective family functioning. Table 1 shows the large number of family therapists who have found cohesion or similar dimensions to be relevant to their work.

Table 1
Family Cohesion Dimension: Related Theoretical Concepts

	Extremely Low Cohesion	Balanced Cohesion	Extremely High Cohesion
Bowen	Emotional divorce	Differentiated self	Undifferentiated family ego mass; emotional fusion
Hans and Handel	Separateness		Connectedness
Kantor and Lehr			Bounding
Litz	Schism, Skew		
Minuchin	Rigid boundaries disengagement	Clear boundaries	Diffuse boundaries Enmeshment
Olson	Low connectedness	Separate connectedness	High connectedness
	Interdependence	Interdependence	Dependence
	Rigid boundaries	Clear individual boundaries	Diffuse boundaries
	Weak coalitions	Marital coalition	Parent-child coalition
Reiss	Interpersonal-distance sensitive	Environment-sensitive	Consensus-sensitive
Rosenblatt	Apartmentness		Togetherness
Scott and Askworth			Extra-ordinary mutual involvement
Steirlin	Expelling Centrifugal force	Centripetal and Centrifugal balance	Binding Centripetal force
Vogel and Bell	Scapegoating		
Wynne	Pseudo-hostility	Mutuality	Pseudo-mutuality Rubber fence

Source: Olson et al., 1979, p. 7.

Family adaptability is "the ability of a marital/family system to change its power structure, role relationships and relationship rules in response to situational and developmental stress" (Olson et al., Note 3, p. 2). Rigid families (again the concepts are similar to Minuchin's) are seen as one extreme while chaotic families comprise the other. Healthy families are thought to show a balance between change and stability.

Adaptability and cohesion have been conceptually linked in the Circumplex Model of Figure 1. From this, 16 possible family types emerge with the four center ones representing healthy families and the perimeter, unhealthy.

After this model was developed, it was discovered that Angell (1936) had developed similar dimensions he called family integration and family adaptability. Dividing families into high, medium and low categories on these two dimensions, he formed nine types of families, or which he located eight in his work from case records (Angell, 1936).

The theoretical validity of the Circumplex Model is supported by a large number of studies that find cohesion and adaptability to be important concepts related to family functioning (Olson et al., 1980). Research testing the model directly has not been extensive, but there are a few studies cited by Olson et al. (1980) as supporting the model's validity (Russell, 1979; Sprenkle & Olson, 1978). These can each be criticized on methodological grounds,

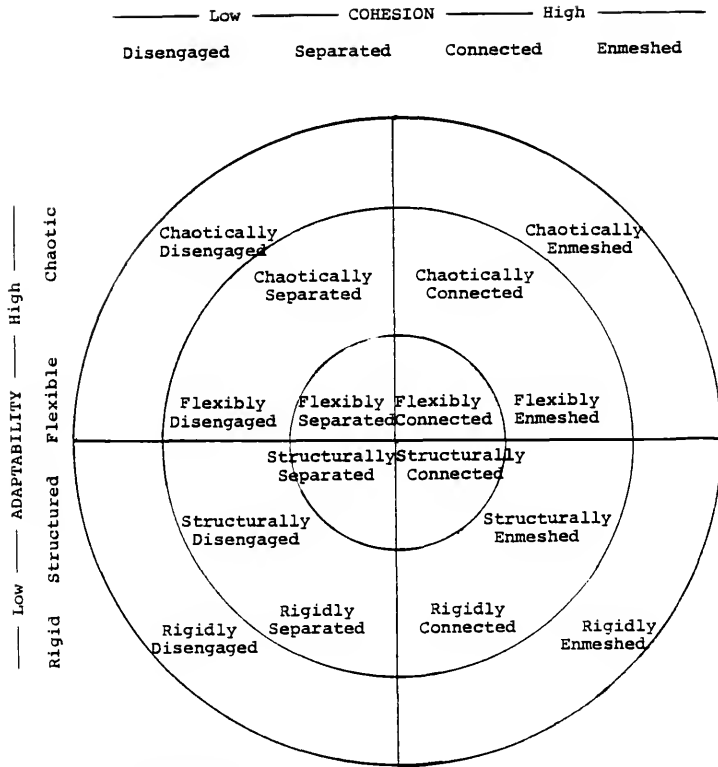


Figure 1
 Sixteen Possible Types of Marital and Family Systems
 Derived from the Circumplex Model

particularly measurement and data analysis issues and must be viewed as preliminary attempts to verify the model.

In summary, these two systems models presently have much influence on the work of practicing family therapists. Students are being trained in family therapy based on these models, yet there has been little attention to developing measures adequate for evaluating either model. The tendency has been to attempt to "prove" the model through the use of woefully inadequate measurement.

CHAPTER II FAMILY MEASUREMENT

Along with the shift in attention from the individual to his larger interpersonal context came the problem of assessing him in that context. Attempts have ranged from using tests designed for individual diagnosis (e.g., Thematic Apperception Test, TAT) with each family member and synthesizing the information into a "family TAT," to tests, both behavioral and self-report, designed specifically for assessing family interactions. Cromwell, Olson and Fournier (1976) compiled a catalogue of the various instruments that have been used in diagnosing families. Within the self-report measures a number of relationship tests have been developed. These assess marital relationships, family and marital problems and a variety of parent-child interactions. The advantage of this type of test is its potential of yielding insight quickly and objectively into the interpersonal behavior between family members. Three tests have been selected for discussion here, because more data have accumulated concerning their reliability, validity and general utility in work with families than with most family instruments. The Family Functioning Index (FFI) and the Family Environment Scale (FES) are included to give the reader a flavor of the range of concepts that researchers have attempted to measure and

the limitations encountered. The third instrument, the Family Adaptability and Cohesion Evaluation Scales (FACES), is the one studied in the present report.

Family Functioning Index

Pless and Satterwhite (1973) developed the Family Functioning Index for use by medical doctors to index families requiring further attention. It is not meant to precisely measure the family's problems; by definition it is a global measure. The original 16 questions were chosen based on both theoretical and empirical considerations. Mothers of 300 school age children (part of a 1% random sample of all families in one county in New York) completed the questionnaire. Two-hundred nine of these children had chronic physical disorders; the remainder were healthy.

Factor analysis of the parents' answers yielded five principal components: communication, togetherness, closeness, decision making and child orientation. These components were never used to modify the instrument into subscales to measure the individual concepts, probably due to the small number of items. Examining the factors, however, one can see that togetherness, closeness and decision making might be related to the models discussed earlier, particularly the dimension of "cohesion."

Reliability of the instrument is suggested by a .72 correlation between the independently obtained scores of

husbands and wives. Families seeking counseling rated as low functioning by case workers showed more agreement between spouses' scores ($r=.74$) than those ranked high functioning ($r=.41$) (Pless & Satterwhite, 1973). Good five year test retest reliability has been reported for the total score (Satterwhite et al., 1976).

Validity of the index was assessed by comparing scores of new registrants at a community counseling agency with ratings of social workers. Mothers' ($n=43$) FFI scores correlated .48 ($p<.01$) with the social workers' ratings, while fathers ($n=39$) correlated .35 ($p<.01$) (Pless & Satterwhite, 1973). The index has differentiated families seeking assistance from a counseling agency from those seeking no assistance (Pless & Satterwhite, 1973). Pless, Roghman and Haggerty (1972) found children from low functioning families were described as having more behavior problems and lower self-esteem than those from high functioning families. Korsch et al. (1978) reported that aspects of the FFE were predictive of non-compliant behavior among children with renal transplants.

These studies suggest that this 16 item questionnaire may be useful in yielding a total score of family functioning. Its length makes it a useful screening device, but its global nature limits its utility for the therapist interested in specific areas of deficit.

Family Environment Scale

Rudolf Moos developed the Family Environment Scale to assess the social climates of all types of families (Moos, 1974). The items were constructed so that they were worded in a manner congruent with Moos' theory of Environmental Press. Each item had to identify characteristics of an environment which would exert a press toward cohesion, achievement or moral-religious emphasis. The focus of the measure is in three areas: interpersonal relationships among family members, the directions of personal growth emphasized in the family and the basic organizational structure of the family. Table 2 lists the dimension to which each of the ten subscales belongs along with their defining qualities. As can be seen from Table 2, the dimensions tapped by the FES, particularly scales four through ten, are descriptors rather than interaction measures. Moos has used the FES in preliminary attempts to obtain family profiles similar to MMPI profiles (Moos & Moos, 1976).

The 90 true-false statements which comprise the FES were selected and grouped into the ten subscales using the following criteria: (1) The overall item split should be as close to 50-50 as possible to avoid items characteristic of only extreme families. (2) Items should correlate more highly with their own than any other subscale. (3) Each of the subscales should have an approximately equal number of items scored true and false to control for acquiescence

Table 2
Family Environment Scale Subscale Descriptions

<u>Relationship Dimensions</u>	
1. Cohesion	The extent to which family members are concerned and committed to the family and the degree to which family members are helpful and supportive of each other.
2. Expressiveness	The extent to which family members are allowed and encouraged to act openly and to express their feelings directly.
3. Conflict	The extent to which the open expression of anger and aggression and generally conflictual interactions are characteristic of the family.
<u>Personal Growth Dimensions</u>	
4. Independence	The extent to which family members are encouraged to be assertive, self-sufficient, to make their own decisions and to think things out for themselves.
5. Achievement Orientation	The extent to which different types of activities (i.e., school and work) are cast into an achievement oriented or competitive framework.
6. Intellectual-Cultural Orientation	The extent to which the family is concerned about political, social, intellectual and cultural activities.
7. Active Recreational Orientation	The extent to which the family participates actively in various kinds of recreational and sporting activities.
8. Moral-Religious Emphasis	The extent to which the family actively discusses and emphasizes ethical and religious issues and values.
<u>System Maintenance Dimensions</u>	
9. Organization	Measures how important order and organization is in the family in terms of structuring the family activities, financial planning, and explicitness and clarity in regard to family rules and responsibilities.
10. Control	Assesses the extent to which the family is organized in a hierarchical manner, the rigidity of family rules and procedures and the extent to which family members order each other around.

Source: Moos, R. and Moos, B., 1976, p. 360.

response set. (4) The final subscales should show only low to moderate intercorrelations. (5) Each item and subscale had to maximally discriminate among families (Moos, 1976).

The FES was given to 285 families (1,000 individuals) of various sizes primarily from upper and middle income levels. Unfortunately, the data employed for item selection and subscale construction were obtained from this same sample so that the subscale dimensions were never independently confirmed. Despite the factor analytic rationale for item selection given above, Moos never factor analyzed his data (Robertson & Hyde, Note 1).

The ten subscales have been found to show adequate internal consistency (.64 to .79) and good eight week test-retest reliability (.68 to .86) and have an average intercorrelation of .20, indicating they measure distinct though somewhat related aspects of the family environment (Moos, n.d.).

A comparison between 42 clinic families and 42 "normal" families matched for size and composition showed the clinic families obtaining significantly lower scores on cohesion, intellectual-cultural orientation and active-recreational orientation. This provides some support for the construct validity of the FES (Moos, 1974). However, Janes and Hesselbrock (Note 2) found that four of the ten scales correlated significantly with the Personal Reaction Inventory measure of social desirability.

Robertson and Hyde (Note 1) performed an orthogonal factor analysis on responses from half their sample of 686 freshmen and sophomore high school students. Their data indicated that Moos' subscales did not adequately represent the dimensions of the FES. They found an eight factor solution the best but one factor was uninterpretable. Their reformulated scales are 1. Group Cohesion (13 items, overlaps Moos' cohesion scale but not exactly), 2. Conflict (7 items), 3. Activities (8 items), 4. Structure (7 items), 5. Protestant Ethic (13 items), 6. Religion (5 items), 7. Verbal-Intellectual Orientation (10 items). Using these seven scales, they replicated using the rest of their sample and found that Group Cohesion, Conflict, Structure and Religion replicated very well while the other three replicated moderately well. These seven subscales were found to be internally consistent (.48-.67) and have relatively low intercorrelations, the highest being Conflict with Group Cohesion ($r = -.35$).

Examining these factor analyzed subscales, one can again see the suggestion of a relationship between some of these subscales (e.g., cohesion, structure, conflict) and the constructs of the two models discussed earlier. If the factor analyses of these scales replicate with an adult population, a typology of families similar to that which Moos and Moos (1976) have attempted, could be pursued. Since the instrument is oriented toward describing the family environment

more than the interactions between family members, it is not of great utility to all family therapists. It is no surprise that it has not been extensively used by therapists.

The Family Adaptability and Cohesion
Evaluation Scales

In response to the need for a method to measure the two dimensions, family cohesion and adaptability, postulated by their Circumplex Model, Olson et al. (Note 3) developed a self-report instrument, FACES. Unlike the FFI and the FES, FACES was designed as a tool for use by family therapists with the goal of diagnosing family target behaviors to be altered through therapy.

Initial items were composed to measure nine concepts posited by the model to be related to cohesion (emotional bonding, independence, family boundaries, coalitions, time, space, friends, decision making, interests, recreation) and seven thought to be relevant to adaptability (assertiveness, control, discipline, negotiation, roles, rules, system feedback). These 203 face valid items were rated by 35 marriage and family counselors for low to high cohesion and adaptability. Then 410 students in a college level family relationships course took the questionnaire. This sample, however, cannot be considered representative of the population for which the test is designed and the subjects' experience in their course indicates probably sophistication with respect to the subject matter.

These student responses were then factor analyzed but the two scales, cohesion and adaptability, were analyzed separately. Thus, the independence of these two dimensions has not been empirically tested. Portner (1982, p. 58) refers to the independence of the dimensions being confirmed by Candyce Russell (1979) in "two major efforts to test this assumption" but again, the factor analyses she refers to used 30 and 20 subjects respectively, an insufficient number for the large number of items.

From Olson and others' (Note 3) factor analysis of the adaptability items, there emerge two factors accounting for 78.6% of the variance. Most of the chaotic and rigid items (the extremes of adaptability) loaded on factor one while the moderate items loaded on the second factor. Rather than supporting Olson and others' (Note 3) belief that "chaotic" and "rigid" families represent maladaptive extremes of an "adaptability" dimension, this two-factor solution implies a two-dimensional structure for this variable. It also implies that the chaotic and rigid items which loaded on factor one are independent of the moderate items (factor two). This does not make sense in terms of the described model, but Olson et al. (Note 3) did not explain this discrepancy and indeed, described their results as if a discrepancy did not exist.

In factor analyzing the cohesion items the first three factors accounted for 33.7%, 14.1% and 11.1% of the variance.

The next factor accounted for only 4.6% of the variance, yet Olson et al. (Note 3) opted for the four factor solution selecting their "disengaged" items from factor one, "enmeshed" from factor two and "moderate" from factors three and four. Again, their analysis did not support a unidimensional conceptualization of this variable's structure.

Additionally, Olson et al. (Note 3) did not use the results of their factor analyses to score their selected items using the factor scoring coefficients. They chose instead to use a weighted scoring system in which items at the chaotic extreme (for adaptability) are weighted or multiplied by three, the moderate items are weighted by two, and the other extreme (rigid items in this case) are weighted by one. This has the disadvantage of not incorporating the information yielded in their factor analyses. In selecting items to include in the final scales, their criteria necessitated six items for each subscale: two for each of the high, moderate and low levels of the concept. On the cohesion scale, in particular, this process resulted in items being retained that correlated as low as .11 with the factor. Thus, items were not selected so much with regard to their empirical derivation via factor loadings as by their face validity and theoretical fit with the Circumplex Model. It is entirely probable that some items were retained that loaded very low on a factor while others with higher loadings were discarded because they did not fit the rigid criteria mentioned above.

Included in the final 111 items were 15 items adapted for families from Edmonds' (1967) Marital Conventionalization Scale. This scale measures the "extent to which a person distorts his appraisal of a phenomenon in the direction of social desirability" (Edmonds, 1967, p. 682). Conventionalization, or social desirability, as it is more commonly called, is a form of self-deception and is not an intentional distortion of responses. Edmonds (1967) discusses support for his hypothesis that this tendency is a great problem in measuring marital interaction because social approval and consequent ego-involvement are greater in matters pertaining to one's marriage than in any other area. His results indicated a .63 correlation of his scale with the Locke-Wallace short scale of marital adjustment. Since matters of family functioning may be hypothesized to be equally sensitive to such tendencies, Olson et al. (note 3) are to be commended for including these items. Unfortunately, all items on the scale are answered on a four point scale from "4 = true all the time" to "1 = true none of the time." This occasionally puts the respondent in the position of having to respond to a "never" question with a one to four answer, as in the following example of social desirability item number 38:

38. I have never regretted being with my family not even for a moment.

1	2	3	4
Never True	Sometimes True	Usually True	Always True

Joyce Portner, a graduate student working with Olson at the time, was the first to administer the questionnaire to several members of the same family (Portner, 1982). She gave FACES to 53 families in counseling at Youth Service Bureaus, 31 families with runaway adolescent and 117 non-problem families. From each family, both parents and an adolescent child completed the questionnaire for a total of 603 individuals or 201 families. Despite the large number of problem families, this sample was used as a normative sample to establish cutting points for assigning families to categories based on their scores. Factor analyses (again of the two scales separately) were also done with these data but it is unclear whether she used an average family score for each item or used the total sample of 603 individuals as if they were independent. If the latter was the case, the assumptions of the factor analytic procedure were violated. No mention is made of how the social desirability items loaded in the analyses. Her factor analysis of the cohesion items resulted in three factors with factor one containing the "disengaged" items, factor two the "moderate" items, and factor three the "enmeshed" items. The alpha reliabilities for each factor were .52, .77 and .62, respectively.

For adaptability, the analysis also resulted in three factors with the "chaotic" items loading on factor one, the "moderate" items on factor two, and factor three containing

the "rigid" items. The alpha reliabilities of the factors were .81, .85 and .69 respectively.

The alpha internal consistency for the whole cohesion scale was .83 with a Pearson's Split half of $r=.49$ ($p .001$). The Adaptability items had an alpha of .73 with a split half reliability of $r=.42$ ($p<.001$).

The subscales' (e.g., emotional bonding, roles, etc.) measures of internal consistency and split half reliability were low and Olson et al. (Note 3), therefore, recommended that they not be used for research purposes.

Portner (1982) also correlated the two dimensions with the social desirability items. While the correlation was insignificant for the adaptability items, it was moderately correlated with cohesion ($r=.45$, $p<.001$). Thus, it appears that individuals have a tendency to present their families in a socially favorable light when responding to the items on the cohesion scale. Portner (1982) suggests that this problem may be handled by employing a partial correlation technique but then does not do this in her subsequent data analysis.

Using the t-test statistic, the mean scores for fathers, mothers, adolescents and total family of the clinic and non-clinic groups were tested for group differences by Portner (1982). The non-clinic families scored significantly higher on cohesion than did the clinic families and this difference replicated for fathers and mothers but not for adolescents.

There were no significant differences for any group on adaptability. For social desirability the groups were significantly different with fathers, mothers and adolescents of the clinic group scoring lower than their non-clinic counterparts. Portner (1982) interpreted this as reflecting a willingness by clinic families to speak honestly and openly about their feelings.

Portner (1982) attempted to place her families in a 16 cell table similar to the Circumplex Model of Olson et al. (Note 3) in Figure 1 (see page 7). Dividing the families into low, moderately low, moderately high, and high groups on each dimension, she used chi-square analyses. While the majority of both the clinic and non-clinic groups fell in the moderate area on cohesion, more clinic families fell in the low (disengaged) area and more non-clinic families fell in the enmeshed area ($p < .0001$). This was true for the average family score, and also for fathers' scores, mothers' scores and adolescents' scores.

On the adaptability scale, the majority of both groups again fell in the moderate range, but more clinic families were in the chaotic area than were non-clinic families ($p < .04$). This was true for average family score, fathers' scores, mothers' scores and adolescents' scores.

On both scales combined, the majority of all families (45% clinic and 35% non-clinic) were in the moderate ranges. While a greater proportion of the clinic families fell outside the moderate ranges, the trend was non-significant.

Bilbro and Dreyer (1981) attempted a replication (minus six items relating to coalitions) of Olson and others' (Note 3) factor analysis of the cohesion items. Their samples consisted of 48 husbands, their 48 wives, 86 female college students and a fourth sample made by standardizing scores within each subsample and combining them. The sample of husbands and wives were not independent samples, however, since they were from the same families. The size of each sample also was not adequate to factor analyze 48 items. They excluded the social desirability items from their analyses and concluded that the best solution for the cohesion scale was a one-factor solution. In computing alpha reliabilities of the cohesion scale, they found them to be low (wives $\alpha=.58$, husbands $\alpha=.51$, college females $\alpha=.48$, total $\alpha=.65$). They found the reliabilities of a scale made up only from their first factor to be much higher ($r=.81$).

Bilbro and Dreyer (1981) also criticized Olson and others' (Note 3) confusing construction of FACES in which it is not clear whether they view cohesion as a unidimensional or a multidimensional construct. The ratings of cohesion items by therapists on a scale from one to nine and the adding of scores of all items from each factor in final scoring suggest a unidimensional view. However, the listing of nine concepts related to cohesion and the identifying of four cohesion factors from their factor analysis suggests a multidimensional view. There are problems with a multidimensional

view of this construct in that it would allow families to be both enmeshed and disengaged at the same time and implies that the two are not related to each other.

It should be noted here that Olson and his colleagues are now working on a shortened version of FACES. They have made a 40 item version called FACES II and a 10 item version called FACES III which they are administering to 1,000 families.* These new versions will not include a social desirability scale.**

In summary, although of the three instruments discussed, FACES shows the most potential utility for family therapists interested in pinpointing areas of deficit in the relationships among family members, its method of construction and the manner in which the data analyses were conducted leave many unanswered questions about its psychometric properties: Are adaptability and cohesion really two independent dimensions? Is there support for the reliability of the instrument in agreement between the scores of various family members? Can the factors Olson et al. (Note 3) derived be replicated? Does the instrument successfully discriminate between problem and non-problem families? Are the cutting points presently established correct when checked with a normative family sample?

*Olson, D. Personal communication, February, 1982.

**Portner, J. Personal communication, October, 1981.

The present research is a critical look at the Family Adaptability and Cohesion Evaluation Scales. Included in this examination are three aspects. First, a pilot study was undertaken to improve some of the items while leaving the questionnaire substantially intact. Second, an attempt was made to replicate Olson and others' (Note 3) factor analyses and Portner's (1982) measures of reliability using families. Finally, the results of the factor analyses were used to compose empirically derived subscales from the original items and the validity issues relating to both the original and derived scales were explored.

CHAPTER III PILOT STUDY

Method

A preliminary investigation of the 111-item FACES scales was done by administering the scale to 40 undergraduates in an introductory Psychology class. The same group was given a revised version of the scale with the items rewritten so that they would be easier to read. Using Fry's (1968) method for calculating the readability level, Olson's original FACES had a late sixth grade reading level while the revision had a late fourth grade reading level. The average completion time for each instrument was approximately 15-20 minutes.

If the three subscales (cohesion, adaptability and social desirability) are theoretically independent, each item thought to measure cohesion, for example, should correlate more with the cohesion scales than with either of the other two scales and the three scale scores should have low inter-correlations. The scales should also show good internal consistency. The extent to which this was true for the pilot sample was examined.

Results

The alpha coefficients of internal consistency, shown in Table 3, were adequate for the three original scales. However, the items did not consistently show a higher correlation with their own scale than with the other two scales. Seventy-nine percent of the cohesion items correlated more with either the adaptability scale or the social desirability scale than with cohesion. Sixty-seven percent of the adaptability items correlated more with one of the other scales than with their own. Only on the social desirability scale were all the items most highly correlated with their own scale.

Table 3
Alpha Coefficients of Internal Consistency

	Original FACES	Final Revised Version
Cohesion	.88	.85
Adaptability	.95	.93
Social Desirability	.71	.67

If the scales are independent, one would not expect the scale scores for cohesion and adaptability to be correlated with each other. Table 4 shows the intercorrelations for this preliminary sample. Olson and others' (Note 3) original

Table 4
Pilot Study Scale Correlations

	Original Cohesion	Original Adaptability	Original Social Desirability	Revised Cohesion	Revised Adaptability	Revised Social Desirability
Original Cohesion				.90* p<.01		
Original Adaptability	.43* p<.01				.88* p<.01	
Original Social Desirability	.27 p<.09	.28 p<.08				.97* p<.01
Revised Cohesion						
Revised Adaptability				.22 p<.17		
Revised Social Desirability				.27 p<.10	.24 p<.14	

*Statistically significant

cohesion scales correlated significantly with their original adaptability scale. The original social desirability scale did not correlate with the other two scales. The same analyses were undertaken for the rewritten items. Items for the final version of FACES to be used with a large sample of families were chosen from both the original and rewritten versions of FACES with the following criteria:

(1) Each item was to be more highly correlated with its own than any other scale. When neither alternative met this criterion, as was true in many cases, the item that most closely fit the criterion was chosen.

(2) Scale intercorrelations between the final revised version and the original version were to be high positive correlations, so that the original FACES and the final revision are substantially the same.

(3) Alpha internal consistency was to remain high.

(4) The reading level of the final version was to be lower (easier to read) than that of the original.

When these criteria were followed, 14 of the cohesion items, 16 of the adaptability items and 3 of the social desirability items were altered for the final version of the questionnaire. These items, their item correlation coefficients and the subscales to which they belong are listed in Appendix A.

In addition to the above changes, some format changes were also made. To make administration to a large number of

people easier and to minimize problems with transcription of answers to a separate answer sheet, the questions were written with the answer immediately below. This enabled the respondent to simply circle the best choice.

The final revised version (referred to from this point on as FACES-R) is a questionnaire that is highly similar to Olson's original FACES, but it is easier to read (low sixth grade level). More of the FACES-R items correlated with their own scale rather than the other two scales, and each scale had good internal consistency. A copy of FACES-R is in Appendix B. The correlations between the scales of Olson and others' (Note 3) original FACES and that of FACES-R are available in Table 4. The correlations between the three original and revised scales were highly significant. Thus, the revision is substantially the same in meaning, while being improved psychometrically, making it more likely that Olson and others' (Note 3) theory of the independence of the cohesion and adaptability dimensions would be supported.

CHAPTER IV FACES-R STUDY

Method

Subjects were 248 families who had at least one child between the ages of 2 and 18 living in the home. Of these, 42 families were "clinic" families being evaluated or with at least one member in treatment for a problem that could be seen as appropriate for family intervention. These clinic families were seen at either a community mental health center or in the psychiatry department of a teaching hospital. The remaining 206 families were non-clinic families from a medium size metropolitan, university city. About half were solicited through the elementary and secondary school run by the university, while the other half were solicited through girl scout troops and church groups.

Procedure

In the case of the clinic families, therapists were asked to administer the measures to their patients at evaluation or early in treatment. They were also asked to provide descriptive data on the referring problem as well as rate the families on cohesion and adaptability as defined

by Olson et al. (Note 3). All materials were then given to the researcher to be scored anonymously.

The participation of non-clinic families was solicited by letter through the school and a packet with all necessary forms was sent home with the child if the parents agreed to participate. For the other groups (e.g., girl scouts), the researcher went to a group meeting, explained the project to the children and gave them a packet to take home with a letter of explanation enclosed for their parents. In both cases, follow-up phone calls were made to answer questions, encourage response and arrange for the pick up of the completed questionnaires. Anonymity was insured by use of only first names on the questionnaire. Family members were instructed to complete the questionnaires by themselves and not to read those of other members. All members of the family age 11 or older were asked to participate and informed consent (see Appendix C) was obtained from all families.

Measures

Forms. FACES-R (see Appendix B) was the primary measure used in the study. In addition, a family demographic form (in Appendix C) was completed by a parent of each family. For the clinic families, the therapists were also asked to complete the therapist form (also in Appendix C).

Scoring. FACES-R was scored by Olson and others' (Note 3) directions. This procedure involved weighting the enmeshed and chaotic items by multiplying the response by three. The moderate items were multiplied by two and the disengaged and rigid items were multiplied by one. One modification was made to handle the problem of missing answers since Olson and others (Note 3) did not suggest a method. If a question was left blank, its value was estimated based on that subject's responses to the other five items on the subscale. In no case were more than two items in a subscale estimated.

CHAPTER V RESULTS OF FACES-R STUDY

Sample Characteristics

While an attempt was made to obtain a cross-section of families of many types, there were nonetheless differences. Socioeconomic status estimates (SES) were obtained by using Hollingshead and Redlich's (1958) two-factor scale which estimates SES from occupation and education of the providing parent. In cases where both parents work, the highest level obtained by computing the scores for each parent was used. Table 5 summarizes the characteristics of this group as well as the clinic group. Where the percentages do not add to 100, the others were not able to be classified from the data. As can be seen from the table, the clinic group was skewed in the direction of lower SES and had proportionally more blacks. The non-clinic group was skewed in the direction of higher SES and white families.

The clinic families also were more likely to be single parent families, and the non-clinic families more often had both parents working. Proportionally more of the clinic families had young children living in the home.

Table 5
Percentages of Clinic and Non-Clinic Groups
Sample Characteristics

	Clinic	Non-Clinic
Race		
Black	39%	6%
White	61%	92%
SES		
1 (high)	7%	32%
2	2%	21%
3	24%	31%
4	26%	12%
5 (low)	39%	4%
Single Parent Families	54%	16%
Families with Two Parents Working	34%	56%
Children Living in Home		
Under age 6	37%	21%
Age 6-12	68%	56%
Age 13-17	53%	51%
Over age 18	10%	12%

Reliability of the Scales

Internal consistency assessed using Cronbach's alpha (Cronbach, 1951) was high. For the average family scores on cohesion, it was .95, while for the average adaptability scale scores, it was .92. Social desirability had an alpha coefficient of .68. Even when only the youngest respondents (age 11) were considered, reliability calculated in this manner remained high for cohesion and adaptability (.92 and .90, respectively), but lost some on social desirability (.57).

Correlations between family members' scores can be considered another form of interrater reliability. These are shown for the cohesion and adaptability scales in Table 6. For the cohesion scale, fathers' scores correlated significantly with those of mothers and oldest siblings, while mothers' scores did so with those of both siblings. The siblings' scores also followed this pattern. On the adaptability scale, only the mothers' scores and the second oldest siblings' scores correlated significantly. In all cases, even the significant correlations are low.

Independence of the Scales

In Olson and others' (Note 3) model, the dimensions of adaptability and cohesion are assumed to be independent. The two FACES scales were also assumed to be independent, but this has never been adequately tested. To assess the

Table 6
Correlations between Family Members

	Cohesion			Adaptability		
	Mother	Oldest Sibling	Second Oldest Sibling	Mother	Oldest Sibling	Second Oldest Sibling
Father	.38* p<.03 N=.28	.19* p<.03 N=128	.07 p<.62 N=58	-.08 p<.31 N=146	-.05 p<.55 N=124	-.01 p<.92 N=58
Mother		.25* p<.0007 N=179	.38* p<.0006 N=79		.03 p<.73 N=176	.24* p<.03 N=79
Oldest Sibling			.35* p<.001 N=83			.09 p<.43 N=83

*Statistically significant

extent to which the cohesion and adaptability are independent, the scale scores were intercorrelated for the FACES-R scales. Tables 7 and 8 show scale intercorrelations for the entire sample (all fathers, mothers and children) and for average family scores.

For the entire sample, the correlation between adaptability and cohesion was low but highly significant. The same was true when the statistic was computed with average family scores.

In addition, each of the two scales was correlated with the scale score on social desirability. For the cohesion scale this correlation was moderate and highly significant. This was true both for the entire sample and for the average family scores.

The adaptability scale showed a low and barely significant correlation with social desirability for average family scores. For the entire sample, this was not replicated.

Norms

Table 9 contains the scale means and standard deviations (where available) for the groups in the present study, Olson and others' (Note 3) study and Portner's (1982) study. In the case of families, an average family score was used. While this is not ideal since it tends to average the extreme members of the family to a perhaps deceptive moderate

Table 7
Scale Intercorrelations
entire sample (N=625)

	Adaptability	Social Desirability
Cohesion	.24* p<.0001	.51* p<.0001
Adaptability		.06 p<.11

*Statistically significant

Table 8
Scale Intercorrelations
average family scores (N=252)

	Adaptability	Social Desirability
Cohesion	.30* p<.0001	.59* p<.0001
Adaptability		.12* p<.05

*Statistically significant

Table 9
Normative Comparison of Three Studies

	Cohesion		Adaptability		Social Desirability	
	non-clinic	clinic	non-clinic	clinic	non-clinic	clinic
Olson et al. (Note 3) Students	$\bar{x}=251$ S.D.=19 N=410		$\bar{x}=183$ S.D.=15 N=410		$\bar{x}=35$ S.D.=5 N=410	
Portner (1981) Families	$\bar{x}=255$ N=117	$\bar{x}=245^*$ N=53	$\bar{x}=182$ N=117	$\bar{x}=184$ N=53		
Fathers	$\bar{x}=257$ N=117	$\bar{x}=245^*$ N=53	$\bar{x}=179$ N=117	$\bar{x}=180$ N=53	$\bar{x}=38$ N=117	$\bar{x}=34^*$ N=53
Mothers	$\bar{x}=253$ N=117	$\bar{x}=243^*$ N=53	$\bar{x}=179$ N=117	$\bar{x}=182$ N=53	$\bar{x}=37$ N=117	$\bar{x}=33^*$ N=53
Adolescents	$\bar{x}=254$ N=117	$\bar{x}=248$ N=53	$\bar{x}=186$ N=117	$\bar{x}=190$ N=53	$\bar{x}=38$ N=117	$\bar{x}=33^*$ N=53
Present Study Families	$\bar{x}=261$ S.D.=14.7 N=206	$\bar{x}=254$ S.D.=24.5 N=42	$\bar{x}=181$ S.D.=10.4 N=206	$\bar{x}=182$ S.D.=13.5 N=42	$\bar{x}=38$ S.D.=3.6 N=206	$\bar{x}=36$ S.D.=4.4 N=42
Fathers	$\bar{x}=266$ S.D.=19.5 N=146	$\bar{x}=246$ S.D.=19.5 N=11	$\bar{x}=181$ S.D.=14.7 N=146	$\bar{x}=177$ S.D.=19.8 N=12	$\bar{x}=39$ S.D.=4.5 N=146	$\bar{x}=35$ S.D.=3.3 N=12
Mothers	$\bar{x}=261$ S.D.=19 N=193	$\bar{x}=255$ S.D.=24 N=39	$\bar{x}=177$ S.D.=12.7 N=194	$\bar{x}=180$ S.D.=14.5 N=39	$\bar{x}=38$ S.D.=4.3 N=194	$\bar{x}=36.3$ S.D.=14.5 N=39
Adolescents	$\bar{x}=258$ S.D.=20.7 N=134	$\bar{x}=249$ S.D.=26.9 N=17	$\bar{x}=185$ S.D.=16 N=131	$\bar{x}=184$ S.D.=15.5 N=17	$\bar{x}=37$ S.D.=5.0 N=134	$\bar{x}=36$ S.D.=15.5 N=18

*Statistically significant group differences in Portner's (1981) study.

score, the alternative also has disadvantages. This would involve categorizing families into groups such as consensus, non-consensus but cannot take into account the strength of the variable. Portner (1982) discussed all the alternatives and settled on the use of average scores.

On each scale, the families (both clinic and non-clinic) in the present study fell within one standard deviation of Olson and others' (Note 3) sample means. A comparison is not as easy for Portner's (1982) study since she did not report standard deviations.

Validity

There are several ways to approach the question of the validity of FACES-R. If the questionnaire is measuring cohesion and adaptability as defined by Olson et al. (Note 3), any correlation shown with ratings of the same constructs by therapists would be evidence of its validity. If the scales show significant differences between the clinic and non-clinic families, this would further support the scales' validity. Factor analyses in which the cohesion items, for example, load in the expected direction on the same factor, would also be evidence of validity.

Ratings

Therapist ratings of cohesion and adaptability were obtained for the clinic families. These were correlated with

the average family scores, fathers' scores, and mothers' scores. All of the ratings for cohesnion or adaptability showed very low correlations, and these were nonsignificant. Table 10 summarizes these findings.

Table 10
Correlations of Therapists' Ratings with Scale Scores

	Rated Cohesion	Rated Adaptability
Average family scores	-.02 p<.91	.08 p<.64
Fathers' scores	0.23 p<.53	.24 p<.48
Mothers' scores	-.08 p<.65	.12 p<.47

Group Differences

Determining whether the scales differentiated between clinic and non-clinic groups was done in two ways. An analysis of covariance controlling for the effect of socioeconomic status (SES) was done to assess whether the means of the two groups were significantly different. The main effects are summarized in Table 11. In no case did SES significantly affect the results. The social desirability scale was the only one that differentiated between the clinic and non-clinic group. This between groups effect was highly significant with $F = 7.73$, $p < .006$.

Table 11
Main Effect Results Analyses of Covariance
Controlling for SES

	Clinic	Non-Clinic
Cohesion	$\bar{x} = 254$ SD = 24.5	$\bar{x} = 261$ SD = 14.7
Adaptability	$\bar{x} = 182$ SD = 13.5	$\bar{x} = 181$ SD = 10.4
Social Desirability	$\bar{x} = 36^*$ SD = 4.4	$\bar{x} = 38^*$ SD = 3.6

*F = 3.87, $p < .02$

Chi-square analyses were also used to assess any group differences. Each group was divided into low, medium and high scoring families. This was done by determining the means and standard deviations of the non-clinic group for the cohesion and adaptability scales. Low scores were defined as those lower than one standard deviation from the non-clinic group mean. Moderate scores were within one standard deviation and high scores were higher than one standard deviation of this mean. Low scores on the cohesion scale would correspond to what Olson et al. (Note 3) called "disengaged families while high scorers would be the

"enmeshed" families. For the adaptability scale, low scorers would be the "rigid" families and high scorers the "chaotic" families. Moderate scorers, in both cases, would be the moderate or "healthy" families.

Tables 12 and 13 summarize the results of the chi-square analyses for each scale. The cell chi-square is the contribution of each cell to the total chi-square. The overall chi-square was significant only for the cohesion scale and this can primarily be attributed to the disproportionate number of clinic families scoring low on this scale.

An attempt was made to combine the two dimensions in a nine-cell chi-square but more than 20% of the cells had expected counts less than five, thus invalidating the test. The frequency counts thus obtained are displayed in Table 14. However, according to Olson et al. (Note 3), the low-low, high-high, low-high and high-low cells should have a larger proportion of clinic families than non-clinic families if these scales are able to distinguish the two groups, while the other cells should have proportionately more non-clinic families. As can be seen, this was not consistently true.

Factor Analyses

The third support for the validity of the scales would be factor analyses consistent with the composition of the scales. The cohesion items, for example, should factor analyze with one factor having "enmeshed" item loading high and

Table 12
Chi-Square Analysis--Cohesion Scale
Average Family Score

Frequency Cell Chi Square Percent Row Percent Column Percent	Clinic	Non-Clinic	Total
Low (disengaged)	14 6.7 5.65 33.33 33.33	28 1.4 11.29 66.67 13.59	42 16.94
Moderate	22 1.9 8.87 12.64 52.38	152 0.4 61.29 87.36 73.79	174 70.16
High (enmeshed)	6 0.1 2.42 18.75 14.29	26 0.0 10.48 81.25 12.62	32 12.90
Total	42 16.94	206 83.06	248 100.00

Chi Square = 10.381* $p < .006$

*Statistically significant.

Table 13
Chi-Square Analysis--Adaptability Scale
Average Family Score

Frequency Cell Chi-Square Percent Row Percent Column Percent	Clinic	Non-Clinic	Total Frequency Percent
Low (rigid)	8 0.7 3.23 22.86 19.05	27 0.1 10.89 77.14 13.11	35 14.11
Moderate	23 1.0 9.27 13.69 54.76	145 0.2 58.47 86.31 70.39	168 67.74
High (chaotic)	11 1.5 4.44 24.44 26.19	34 0.3 13.71 75.56 16.50	45 18.15
Total frequency Percent	42 16.94	206 83.08	248 100.00

Chi-Square = 3.93, $p < .14$

positive and "disengaged" items loading high and negative on that factor. The moderate items should show high loadings, also on the same factor. The same should be true for the factor analysis of the adaptability items with the "chaotic" items being positive and the "rigid" items negative. In addition, the factor scale scores obtained using the weights from these factor analyses should not correlate with each other since the two scales should be independent if they are measuring two distinct constructs.

An unrotated principal axis orthogonal factor analysis was carried out on the items of each scale. Since there was a large drop in both cases from factor one to factor two in eigen values and percentage of variance accounted for, a one factor solution seemed most appropriate using Cattell's scree test (1966). However, the first five factors are included in Tables 15 and 16 for comparison. Olson and others' (Note 3) data are also included. See Appendix D for the factor loadings of each item on the first factor.

The items tended to load high and in the appropriate direction (e.g., negatively for disengaged items) with few exceptions. The patterns of the factor analyses were the same for average family score, fathers' scores and mothers' scores. Unfortunately, in each case the amount of the total variance accounted for was not high.

A factor analysis of the social desirability items also yielded a one-factor solution with the first factor having an eigen value of 6.3 and accounting for 42% of the variance.

Table 15
Eigen Values and Variance Accounted for by First Five Cohesion Factors

Sample		Factor				
		1	2	3	4	5
Present Study Total Sample (av. family score)	Eigen Value	12.7	3.2	2.8	1.9	1.8
	% of variance	23.5	5.8	5.1	3.6	3.4
	Cum. variance	23.5	29.3	34.5	38.0	41.4
Fathers	Eigen value	8.2	3.3	2.7	2.1	1.8
	% of variance	17.2	7.0	5.5	4.3	3.8
	Cum. variance	17.2	24.1	29.7	3.4	37.8
Mothers	Eigen Value	8.3	3.1	2.4	1.8	1.7
	% of variance	17.4	6.4	5.1	3.8	3.5
	Cum. variance	17.4	23.8	28.9	32.7	36.2
Olson et al. (Note 3)	Eigen Value	17.39	7.3	5.7	2.4	1.8
	% of variance	33.7	14.1	11.1	4.6	3.6
	Cum. variance	33.7	47.8	58.9	63.5	67.0

Table 16
Eigen Values and Variance Accounted for by First Five Adaptability Factors

Sample		Factor				
		1	2	3	4	5
Total Sample	Eigen Value	10.2	3.9	2.6	1.5	1.5
	% of variance	24.2	9.2	6.2	3.6	3.6
	Cum. variance	24.2	33.4	39.7	43.3	46.8
Fathers	Eigen Value	6.9	2.7	2.4	1.7	1.5
	% of variance	19.7	7.7	7.0	4.8	4.2
	Cum. variance	19.7	27.4	34.4	39.2	43.4
Mothers	Eigen Value	6.2	2.8	2.3	1.6	1.5
	% of variance	17.7	7.9	6.6	4.4	4.1
	Cum. variance	17.7	25.6	32.2	36.7	40.8
Olson et al. (Note 3)	Eigen Value	36.7	12.6	3.5	1.7	1.6
	% of variance	58.5	20.1	5.6	2.7	2.5
	Cum. variance	58.5	78.6	84.2	86.9	89.4

The scoring coefficient matrix obtained from each factor analysis is an empirically derived weighting of each item's contribution to that factor. As such, it is the most suitable weighting for that item and can be used to score the factor to obtain a factor score for each of the three scales. This was done and the three obtained factor scores were then intercorrelated to assess the extent to which they are independent and measure distinct concepts. Table 17 displays the results of these correlations. All three factor scores were highly correlated at a highly significant level.

Table 17
Intercorrelations of Factor Scores for FACES-R Scales

	Adaptability	Social Desirability
Cohesion	-.89* p<.0001	.86* p<.0001
Adaptability		-.76* p<.0001

*Statistically significant

CHAPTER VI ATTEMPTS TO IMPROVE THE SCALES

Item Analyses and Further Factor Analyses

Because the factor scores were so highly intercorrelated, implying that they were measuring highly similar constructs, an attempt was made to improve the scales by selecting the best items from each. It was hoped that by doing this scales could be formed that would still account for a reasonable amount of variance yet be more independent of each other.

An item analysis was done using the correlations of each item with its own scale. Cohesion and adaptability items were retained if they correlated significantly ($p < .05$) with their own scale and had factor loadings, in the initial factor analyses, greater than .60. This led to the retention of 15 cohesion items (#20, 39, 58, 60, 24, 62, 98, 47, 66, 84, 102, 35, 91, 18, 37) and 12 adaptability items (#2, 59, 95, 27, 46, 65, 101, 15, 53, 108, 55, 74). All 15 social desirability items were retained. They all correlated significantly with their own scale but some loaded low on their first factor.

Factor analyses were carried out separately on the retained cohesion and adaptability items and again the cohesion items yielded a one-factor solution. This first factor had

an eigen value of 7.5, accounting for 47% of the variance. The adaptability items also yielded a one factor solution with the first factor having an eigen value of 5.6, accounting for 49% of the variance. Appendix D has the loadings of each item on the first factor.

Using the results of the factor analyses on the retained items, factor scores were again calculated and intercorrelated. Table 18 contains the results of these intercorrelations. Again, all three factor scores were still highly significantly correlated.

Table 18
Intercorrelations of Factor Scores for Retained Items

	Adaptability-Retained	Social Desirability
Cohesion-Retained	-.85* p<.0001	-.81* p<.0001
Adaptability-Retained		.77* p .0001

*Statistically significant

Since there were now less items, it was possible to combine these in one factor analysis to see if they yielded the three factors which would be expected if they measure three distinct dimensions. Thus, the 15 social desirability items, 15 retained cohesion items and 12 retained adaptability items were combined in a factor analysis which yielded a one-factor solution. This factor had an eigen value of 16.7 accounting for 40% of the variance. An examination of the items loading

on this factor revealed that most of the social desirability, cohesion and adaptability items loaded moderate to high on the factor. The conservative way to describe the factor is as a social desirability factor. Table 19 contains the items along with their factor loadings on the first factor.

Since the initial attempt to choose items that would yield a distinct factor for each of the three constructs failed, another attempt was made to select a group of items that met even more stringent criteria and would show evidence for some construct other than just social desirability.

Again using the correlation of each item with its own and other scales, items were selected that correlated more with their own than with either of the other two scales. This resulted in 13 cohesion items (#76, 3, 5, 24, 80, 45, 64, 11, 104, 51, 75, 93, 111) and 15 adaptability items (#77, 4, 42, 61, 44, 63, 81, 99, 31, 87, 105, 72, 108, 17, 92) being retained.

A factor analysis of these retained cohesion items yielded another one-factor solution with the first factor having an eigen value of 2.9 accounting for 22.5% of the variance. The same was true for the retained adaptability items. In this case, the one factor accounted for 23% of the variance and had an eigen value of 3.4 Appendix D contains the factor loadings of each item on the first factor.

Intercorrelations of the factor scores obtained were again highly significant but the correlations were somewhat reduced. These are shown in Table 20.

Table 19
Items and Loadings on Factor One All Retained Items

Scale	Item #	Item	Factor Loading
SD	107	I don't think any family could live together with greater harmony than my family.	.79
A	65	Our family does not discuss its problems.	.77
A	27	We talk about our problems and feel good about the answers.	.79
SD	48	My family has all the qualities I've always wanted in a family.	.75
A	46	We feel good about how we solve problems in our family.	.75
SD	71	I don't think anyone could possibly be happier than my family and I when we are together.	.73
C	91	We don't talk much to each other at home.	-.73
C	47	Although family members have individual interests, they still participate in family activities.	.73
C	102	Members of our family share many interests.	.71
C	66	Our family doesn't do things together.	-.69
C	84	We have difficulty thinking of things to do as a family.	-.68
SD	103	Our family is as well adjusted as any family in this world can be.	.68
A	59	In our family, it's important for everyone to express their opinion.	.67
A	15	In our family we make the rules together	.66

Scale	Item #	Item	Factor Loading
SD	57	If I could be a part of any family in the world, I could not have a better match.	.66
C	62	We try to plan some things during the week so we can all be together.	.65
C	20	Family ties are more important to us than any friendship could possibly be.	.65
C	60	Family members find it easier to discuss things with persons outside the family.	.65
A	74	If one way doesn't work in our family, we try another.	.64
C	24	We like to spend some of our free time with each other.	.63
C	39	Family members do not turn to each other when they need help.	-.62
A	2	Family members feel free to say what's on their mind.	.62
C	98	It seems as if family members can never find time to be together.	-.62
C	18	Family members do not check with each other when making decisions.	-.62
A	101	Family members feel they have no say in solving problems.	.62
A	55	We help each other find new ways to do things.	.62
C	35	We respect each other's privacy.	.61
C	58	Home is one of the loneliest places to be.	-.61
SD	85	Family members understand each other completely.	.60
C	37	In our family we are on our own when there is a problem to solve.	-.60

Scale	Item #	Item	Factor Loading
SD	19	My family always understands me no matter how I feel.	.60
SD	89	My family could be happier than it is.	-.59
SD	33	Every new thing I've learned about my family has pleased me.	-.58
A	95	Family members rarely say what they want.	-.56
SD	52	There are times when I don't like my family a lot.	-.55
SD	38	I have never regretted being with my family, not even for a moment.	.54
A	108	It is hard to know what the rules are in our family because they always change.	-.52
A	53	When rules are broken, family members are treated fairly.	.52
SD	14	There are some things I need that I don't get from my family.	.50
SD	10	There are times when other family members do things that make me happy.	.44
SD	29	Our family is not a perfect success.	.39
SD	67	If my family has any faults, I am not aware of them.	-.03

Table 20
Intercorrelations of Factor Scores for Retained Items

	Adaptability-Retained	Social Desirability
Cohesion- Retained	-.44* p<.0001	.62* p<.0001
Adaptability- Retained		-.50* p<.0001

*Statistically significant

CHAPTER VII DISCUSSION

Since the FACES-R questionnaire was designed as a self-report instrument for use in assessing the functioning of families, the present sample was appropriate to study the scales' psychometric properties since it contained clinic and non-clinic families. Portner (1982) was the only other study with this instrument where responses were obtained from parents and children. Olson and others' (Note 3) standardization sample was undergraduates who were asked to respond retrospectively about their families of origin. While the present study's clinic and non-clinic groups differed somewhat, primarily in SES and race, the results should be comparable to Portner's (1982) study.

Before the appropriateness of the Circumplex Model can be assessed, there must be evidence supporting the ability of the FACES-R scales to reliably and validly measure the two dimensions postulated in the model.

Support for the reliability of the scales can be seen in the high alpha coefficients of internal consistency obtained in the present study. These exceeded any reported in previous studies and were contrary to Bilbro and Dreyer's (1981) findings that the cohesion scale reliabilities were low. A possible explanation was reflected in the spontaneous

comments of many respondents in the present study who said the questionnaire was too long and kept asking the same thing over and over. It may be that respondents recognized that if they answered a question in one direction, they should thereafter answer in a manner consistent with their first response.

Some support for the reliability of the cohesion scale was the extent to which family members' scores intercorrelated even though the correlations were low. This pattern was not apparent for the adaptability scale, however. There is also a question as to whether all family members' scores should be expected to correlate with each other. Theoretically, one might expect the responses of a healthy adolescent, for example, to deviate a moderate amount from those of his parents. One would expect parents' responses to agree, however. Since the latter was true for the cohesion scale, there is some evidence for the reliability of this scale.

The similarity between the present study's sample means on the scales and those of Olson et al. (Note 3) and Portner (1982) also supports the consistency of the scales. In every case, the means for the present sample were within one standard deviation of Olson and others' (Note 3) normative sample.

It is in examining support for the validity of the scales that problems arose. Portner (1982) attempted to address the validity question by categorizing her clinic and

non-clinic families into low-moderate and high groups. While the majority of both groups consistently fell in the moderate ranges, she had some limited success in differentiating the two groups.

The present study approached the issue of validity in several ways. Therapists were asked to rate the cohesiveness and adaptability of the clinic families. Since the definitions they were given of these constructs were those of Olson et al. (Note 3), the complete lack of any correlations between ratings and scale scores raised validity questions. Therapists may not have perceived families in a manner congruent with the families' self-perceptions. Since there was no data to support the reliability of the therapists' ratings and these were global in nature, they may not have been appropriate. The ratings were also obtained early in therapy whereas, if they had been obtained later the therapists may have had a better data base from which to rate the families. Or, there is the possibility that what was measured by the FACES-R scales was not cohesion and adaptability as defined by Olson et al (Note 3).

Examination of the scale intercorrelations lent subsistance to the latter conclusion. The cohesion and adaptability scales were clearly not independent since they had a highly significant low correlation with each other. In addition, in both Portner's (1982) study and the present study, the cohesion scale consistently correlated with social desirability.

While neither scale showed any consistent differences between the means for the clinic and non-clinic groups, the

cohesion scale was significantly different for the groups in a chi-square analysis. Portner (1982) found differences between her groups on this scale using both T-tests and chi-square analyses. She did not find differences using the T-test for the adaptability scale, although she did find a difference with the chi-square statistic. The present study used an analysis of covariance to control for SES and still found no difference between the groups on these two scales.

The social desirability scale appeared to be the only scale which consistently revealed highly significant differences between the clinic and non-clinic groups. Portner (1982) found this, as did the present study. In both studies the clinic families' scores were lower on this scale than the non-clinic families. This perception by clinic families could be interpreted as accurately reflecting reality since it is still considered somewhat socially undesirable to require psychotherapy, and it would be difficult to perceive one's family as perfect yet still seek help. The social desirability scale measured the tendency to perceive one's family in a socially favorable light, rather than a tendency to bias the presentation of the family in that direction. In other words, it is not a "faking" scale.

The factor analyses were another way to approach the question of validity. While the findings of the present study's factor analyses did not replicate either those of Oldon et al. (Note 3) or Portner (1982), they did support a bipolar cohesion dimension and a bipolar adaptability

dimension. That is, the cohesion items had one factor on which items, for the most part, loaded in the expected direction depending upon whether they were "disengaged" (loaded negatively) or "enmeshed" (loaded positively). The same was true for the adaptability items. These findings were consistent with the Circumplex Model.

It is unclear why the factor analytic solutions of the two earlier studies were different from those of the present study. The present findings for the cohesion scale were consistent with those of Bilbro and Dreyer (1981) who also found a one-factor solution with those items.

Problems with validity again become evident when the factor scores obtained from the factor analyses of the three scales were intercorrelated. If there existed three separate dimensions these empirically derived factor scores should not correlate with each other. To the contrary, they showed very high and significant intercorrelations. This implied that all three factors obtained from the three separate factor analyses were tapping highly similar dimensions.

Taking the items from each factor which loaded highest on their own factor and correlated the most with their own scale in an item analysis, did not alter the results of a subsequent factor analysis and factor scores intercorrelation. The scales remained highly similar.

In addition, a factor analysis done with all these retained items yielded only one factor rather than the three

separate factors that would substantiate three separate dimensions. This one factor was best described as a social desirability factor. A third attempt to select a different set of items to retain still did not yield factor scores that were uncorrelated.

Thus, the factor analytic results implied that even though there was some evidence that there were differences between the groups on cohesion and less clearly on adaptability, these distinctions may not be due to the theoretical dimensions the scale purports to measure. Instead, it is more likely that these differences were due solely to differences in the groups' perceptions of the extent to which their family is a "perfect" family.

The lack of support in the present study for the validity of the Family Cohesion and Adaptability Evaluation Scales must be taken in context. The entire field of family measurement is in its infancy. Very few attempts have been made to develop a measure of constructs relevant to family functioning and useful to family therapists. The dimensions that FACES-R sought to measure have strong theoretical support among family therapists. It is possible these exist only in the minds of therapists. It is more likely, however, that the problems in measuring by self-report, behaviors of which family members are unaware, as well as the inherent tendency of members to perceive their families in the best possible light, have handicapped this first attempt at measuring

family cohesion and adaptability. In future attempts at such a self-report measure, the more concrete and easily interpretable the item, the more likely it will be to elicit an objective response. While the findings reported here are discouraging, it is by no means time to give up. Olson and his colleagues are to be commended for making this first attempt. However, these scales are not appropriate, in their present form, for use by therapists in assessing families.

APPENDIX A
PILOT STUDY REVISED ITEMS

Changed Cohesion Items

Item No.

- | | |
|-----|--|
| 1. | Original: Family members are concerned with each other's welfare.
Revised: People in my family care about each other. |
| 11. | Original: In our family we know where all family members are at all times.
Revised: In our family we always know where everyone is. |
| 16. | Original: It seems like there is never any place to be alone in our house.
Revised: It seems like there is no place to be alone in our house. |
| 24. | Original: Family members like to spend some of their free time with each other.
Revised: We like to spend some of our free time with each other. |
| 28. | Original: Family members share almost all interests and hobbies with each other.
Revised: In our family we like almost all the same things. |
| 43. | Original: Even when everyone is home, family members spend their time separately.
Revised: Even when we are all home, we all do different things. |
| 49. | Original: Family members are totally on their own in developing their ideas.
Revised: Family members are on their own in doing a project. |
| 54. | Original: Family members don't enter each other's areas or activities.
Revised: Family members don't get into each others things or business. |

Item No.

56. Original: Family members discuss important decisions with each other, but usually make their own choices.
 Revised: We talk about big decisions with each other but make our own choices.
78. Original: Family members feel comfortable inviting their friends along on family activities.
 Revised: When my family does something, friends are welcome.
80. Original: Family members feel pressured to spend most free time together.
 Revised: Family members feel we should spend most of our free time together.
86. Original: It seems as if we agree on everything.
 Revised: It seems as if we agree on everything in my family.
91. Original: Family members seem to avoid contact with each other when at home.
 Revised: We don't talk much to each other at home.
93. Original: We decide together on family matters and separately on personal matters.
 Revised: We decide family matters together and personal matters by ourselves.

Subscales of Changed Cohesion Items

Wt.	Enmeshed	Mod.	Disengaged
1 Emotional Bonding		#1	
1 Family Boundaries		#78	
3 Time	#80	#24	#43
0 Friends			
1 Interests & Rec.	#28		
	#86		
3 Independence	#11		
0 Coalition			#91, 49
3 Space	#16		#54
2 Decision Making		#93	
		#56	
TOTAL	5	5	4

Item Correlation Coefficients
Changed Cohesion Items

		Cohesion	Adaptability	Social Desirability
1	Original	$r = .11$	$r = .26$	$r = .33$
	Revised	$r = .08$	$r = .18$	$r = .35$
11	O	.27	-.41	.15
	R	.36	-.24	.02
16	O	.19	-.06	-.35
	R	.37	-.06	-.35
24	O	.34	.12	.24
	R	.42	.10	.37
28	O	.21	.12	.46
	R	.21	.04	.51
43	O	-.12	-.19	-.23
	R	-.36	-.04	-.20
49	O	-.06	-.09	-.15
	R	-.10	-.09	-.20
54	O	-.02	.13	.45
	R	-.11	-.08	.36
56	O	.02	.31	.10
	R	.10	.08	.48
78	O	.08	.02	.18
	R	-.28	-.18	-.01
80	O	.07	.30	-.08
	R	.30	.03	-.00
86	O	.32	.18	.71
	R	.41	.17	.58
91	O	-.10	.08	-.44
	R	-.25	.01	-.66
93	O	-.05	-.21	-.06
	R	.05	.02	-.01

Changed Adaptability Items

- 6. Original: Family members are afraid to tell the truth because of how harsh the punishment will be.
Revised: Family members are afraid to tell the truth because they will get in trouble.
- 8. Original: Family members talk a lot but nothing ever gets done.
Revised: In our family we talk about doing a lot of things but we never do them.
- 12. Original: Family members have some say in what is required of them.
Revised: Family members get some say in what they have to do.
- 15. Original: Family members make the rules together.
Revised: In our family we make the rules together.
- 17. Original: It is difficult to keep track of what other family members are doing.
Revised: It is hard to know what other family members are doing.
- 21. Original: When our family has an argument, family members just keep to themselves.
Revised: When our family disagrees, family members don't talk.
- 27. Original: Family members discuss problems and usually feel good about the solutions.
Revised: We talk about our problems and feel good about the answers.
- 31. Original: No one in our family seems to be able to keep track of what their duties are.
Revised: No one in our family knows what their choices are.
- 34. Original: Our family has a rule for almost every possible situation.
Revised: Our family has a rule for almost all situations.
- 40. Original: It is hard to know what other family members are thinking.
Revised: It is hard to know what other family members think.

46. Original: We feel good about our ability to solve problems.
 Revised: We feel good about how we solve problems in our family.
50. Original: Once a task is assigned to a family member, there is no chance of changing it.
 Revised: If a family member is given a job, they can't change it.
61. Original: There is no leadership in our family.
 Revised: There is no leader in our family.
69. Original: In our family, everyone shares responsibilities.
 Revised: In our family we share duties.
83. Original: When trying to solve problems, family members jump from one attempted solution to another without giving any of them time to work.
 Revised: When there is a problem, we jump from one answer to another without giving any of them a chance to work.
99. Original: Family members are severely punished for anything they do wrong.
 Revised: People in our family get in lots of trouble if they do anything wrong.

Subscales of Changed Adaptability Items

Wt.		Chaotic	Mod.	Rigid
2	Assertiveness	#40		#21
1	Control	#61		
2	Discipline			#99
				#6
4	Negotiation	#8, 83	#27, 46	
4	Roles	#31	#12, 69	#50
2	Rules		#15	#34
2	System Feedback	#17	#55	
	TOTAL	6	6	5

Item Correlation Coefficients
Changed Adaptability Items

		Adaptability	Cohesion	Social Desirability
6	Original	-.16	.14	-.36
	Revised	-.22	.18	-.36
8	O	.17	.03	-.39
	R	.42	.12	-.00
12	O	.24	.15	.27
	R	.15	-.06	.15
15	O	.35	.11	.46
	R	.34	-.15	.32
17	O	.20	.05	-.12
	R	.21	.04	.08
21	O	.02	.17	-.18
	R	-.34	.01	-.59
27	O	.24	.50	.57
	R	.18	.15	.55
31	O	.18	.25	-.09
	R	.36	.22	-.15
34	O	-.20	.31	.09
	R	-.24	.19	-.13
40	O	.02	-.05	-.35
	R	-.15	-.03	-.14
46	O	.21	.17	.63
	R	.37	.05	.72
50	O	.10	.35	-.20
	R	.10	.11	-.11
61	O	.64	-.01	.34
	R	.70	-.13	.24
69	O	.27	.26	.38
	R	-.16	-.09	.21
83	O	.42	-.10	-.25
	R	.50	.03	-.15
99	O	.17	.01	.15
	R	-.22	.01	-.19

Changed Social Desirability Items

14. Original: I have some needs that are not being met by family members.
 Revised: There are some things I need that I don't get from my family.
19. Original: My family completely understands and sympathizes with my every mood.
 Revised: My family always understands me no matter how I feel.
52. Original: There are times when I do not feel a great deal of love and affection for my family.
 Revised: There are times when I don't like my family a lot.

Item Correlation Coefficients
Changed Social Desirability Items

		Social Desirability	Adaptability	Cohesion
14	Original	.30	-.02	.17
	Revised	-.35	.06	-.06
19	O	.57	.42	.48
	R	.61	.33	.26
52	O	-.45	-.01	-.14
	R	-.68	-.17	-.08

APPENDIX B
FACES-R QUESTIONNAIRE

First Name _____ Age _____ Sex _____
IDENTIFICATION: _____

FACES-R

INSTRUCTIONS: Please answer each question by circling the number that best describes your family.

-
1. People in my family care about each other.
1 2 3 4
Never true Sometimes true Usually true Always true
 2. Family members feel free to say what's on their mind.
1 2 3 4
Never true Sometimes true Usually true Always true
 3. We don't have spur of the moment guests at mealtime.
1 2 3 4
Never true Sometimes true Usually true Always true
 4. It is hard to know who the leader is in our family.
1 2 3 4
Never true Sometimes true Usually true Always true
 5. It's difficult for family members to take time away from the family.
1 2 3 4
Never true Sometimes true Usually true Always true
 6. Family members are afraid to tell the truth because they will get in trouble.
1 2 3 4
Never true Sometimes true Usually true Always true
 7. Most personal friends are not family friends.
1 2 3 4
Never true Sometimes true Usually true Always true
 8. In our family we talk about doing a lot of things but we never do them.
1 2 3 4
Never true Sometimes true Usually true Always true

9. Family members feel guilty if they want to spend some time alone.
 1 2 3 4
 Never true Sometimes true Usually true Always true
10. There are times when other family members do things that make me unhappy.
 1 2 3 4
 Never true Sometimes true Usually true Always true
11. In our family we always know where everyone is.
 1 2 3 4
 Never true Sometimes true Usually true Always true
12. Family members get some say in what they have to do.
 1 2 3 4
 Never true Sometimes true Usually true Always true
13. The parents in our family stick together.
 1 2 3 4
 Never true Sometimes true Usually true Always true
14. There are some things I need that I don't get from my family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
15. In our family we make the rules together.
 1 2 3 4
 Never true Sometimes true Usually true Always true
16. It seems like there is no place to be alone in our house.
 1 2 3 4
 Never true Sometimes true Usually true Always true
17. It is hard to know what other family members are doing.
 1 2 3 4
 Never true Sometimes true Usually true Always true
18. Family members do not check with each other when making decisions.
 1 2 3 4
 Never true Sometimes true Usually true Always true
19. My family always understands me no matter how I feel.
 1 2 3 4
 Never true Sometimes true Usually true Always true
20. Family ties are more important to us than any friendship could possibly be.
 1 2 3 4
 Never true Sometimes true Usually true Always true

21. When our family disagrees, family members don't talk.
 1 2 3 4
 Never true Sometimes true Usually true Always true
22. Family members often answer questions that were addressed to another person.
 1 2 3 4
 Never true Sometimes true Usually true Always true
23. The parents check with the children before making important decisions in our family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
24. We like to spend some of our free time with each other.
 1 2 3 4
 Never true Sometimes true Usually true Always true
25. Punishment is usually pretty fair in our family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
26. Family members are encouraged to have friends of their own as well as family friends.
 1 2 3 4
 Never true Sometimes true Usually true Always true
27. We talk about our problems and feel good about the answers.
 1 2 3 4
 Never true Sometimes true Usually true Always true
28. In our family we like almost all the same things.
 1 2 3 4
 Never true Sometimes true Usually true Always true
29. Our family is not a perfect success.
 1 2 3 4
 Never true Sometimes true Usually true Always true
30. Family members are extremely independent.
 1 2 3 4
 Never true Sometimes true Usually true Always true
31. No one in our family knows what their chores are.
 1 2 3 4
 Never true Sometimes true Usually true Always true
32. Family members feel it's "everyone for themselves."
 1 2 3 4
 Never true Sometimes true Usually true Always true

33. Every new thing I've learned about my family has pleased me.
 1 2 3 4
 Never true Sometimes true Usually true Always true
34. Our family has a rule for almost all situations.
 1 2 3 4
 Never true Sometimes true Usually true Always true
35. We respect each other's privacy.
 1 2 3 4
 Never true Sometimes true Usually true Always true
36. Once our family has planned to do something, it's difficult to change it.
 1 2 3 4
 Never true Sometimes true Usually true Always true
37. In our family we are on our own when there is a problem to solve.
 1 2 3 4
 Never true Sometimes true Usually true Always true
38. I have never regretted being with my family, not even for a moment.
 1 2 3 4
 Never true Sometimes true Usually true Always true
39. Family members do not turn to each other when they need help.
 1 2 3 4
 Never true Sometimes true Usually true Always true
40. It is hard to know what other family members think.
 1 2 3 4
 Never true Sometimes true Usually true Always true
41. Family members make visitors feel at home.
 1 2 3 4
 Never true Sometimes true Usually true Always true
42. Parents make all of the important decisions in our family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
43. Even when we are all home, we all do different things.
 1 2 3 4
 Never true Sometimes true Usually true Always true

44. Parents and children in our family discuss together the method of punishment.
 1 2 3 4
 Never true Sometimes true Usually true Always true
45. Family members have little need for friends because the family is so close.
 1 2 3 4
 Never true Sometimes true Usually true Always true
46. We feel good about how we solve problems in our family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
47. Although family members have individual interests, they still participate in family activities.
 1 2 3 4
 Never true Sometimes true Usually true Always true
48. My family has all the qualities I've always wanted in a family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
49. Family members are on their own in doing a project.
 1 2 3 4
 Never true Sometimes true Usually true Always true
50. If a family member is given a job, they can't change it.
 1 2 3 4
 Never true Sometimes true Usually true Always true
51. Family members seldom take sides against other members.
 1 2 3 4
 Never true Sometimes true Usually true Always true
52. There are times when I don't like my family a lot.
 1 2 3 4
 Never true Sometimes true Usually true Always true
53. When rules are broken, family members are treated fairly.
 1 2 3 4
 Never true Sometimes true Usually true Always true
54. Family members don't get into others things or business.
 1 2 3 4
 Never true Sometimes true Usually true Always true.
55. We help each other find new ways to do things.
 1 2 3 4
 Never true Sometimes true Usually true Always true.

56. We talk about big decisions with each other but make our own choices.
 1 2 3 4
 Never true Sometimes true Usually true Always true
57. If I could be a part of any family in the world, I could not have a better match.
 1 2 3 4
 Never true Sometimes true Usually true Always true
58. Home is one of the loneliest places to be.
 1 2 3 4
 Never true Sometimes true Usually true Always true
59. In our family, it's important for everyone to express their opinion.
 1 2 3 4
 Never true Sometimes true Usually true Always true
60. Family members find it easier to discuss things with persons outside the family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
61. There is no leader in our family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
62. We try to plan some things during the week so we can all be together.
 1 2 3 4
 Never true Sometimes true Usually true Always true
63. Family members are not punished or reprimanded when they do something wrong.
 1 2 3 4
 Never true Sometimes true Usually true Always true
64. In our family we know each other's close friends.
 1 2 3 4
 Never true Sometimes true Usually true Always true
65. Our family does not discuss its problems.
 1 2 3 4
 Never true Sometimes true Usually true Always true
66. Our family doesn't do things together.
 1 2 3 4
 Never true Sometimes true Usually true Always true

67. If my family has any faults, I am not aware of them.
 1 2 3 4
 Never true Sometimes true Usually true Always true
68. Family members enjoy doing things alone as well as together.
 1 2 3 4
 Never true Sometimes true Usually true Always true.
69. In our family we share duties.
 1 2 3 4
 Never true Sometimes true Usually true Always true
70. Parents agree on how to handle the children.
 1 2 3 4
 Never true Sometimes true Usually true Always true
71. I don't think anyone could possibly be happier than my family and I when we are together.
 1 2 3 4
 Never true Sometimes true Usually true Always true
72. It is unclear what will happen when rules are broken in our family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
73. When a bedroom door is shut, family members will knock before entering.
 1 2 3 4
 Never true Sometimes true Usually true Always true
74. If one way doesn't work in our family, we try another.
 1 2 3 4
 Never true Sometimes true Usually true Always true
75. Family members are expected to have the approval of others before making decisions.
 1 2 3 4
 Never true Sometimes true Usually true Always true
76. Family members are totally involved in each other's lives.
 1 2 3 4
 Never true Sometimes true Usually true Always true
77. Family members speak their mind without considering how it will affect others.
 1 2 3 4
 Never true Sometimes true Usually true Always true

78. When my family does something, friends are welcome.
 1 2 3 4
 Never true Sometimes true Usually true Always true
79. Each family member has at least some say in major family decisions.
 1 2 3 4
 Never true Sometimes true Usually true Always true
80. Family members feel we should spend most of our free time together.
 1 2 3 4
 Never true Sometimes true Usually true Always true
81. Members of our family can get away with almost anything.
 1 2 3 4
 Never true Sometimes true Usually true Always true
82. Family members share the same friends.
 1 2 3 4
 Never true Sometimes true Usually true Always true
83. When there is a problem, we jump from one answer to another without giving any of them a chance to work.
 1 2 3 4
 Never true Sometimes true Usually true Always true
84. We have difficulty thinking of things to do as a family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
85. Family members understand each other completely.
 1 2 3 4
 Never true Sometimes true Usually true Always true
86. It seems as if we agree on everything in my family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
87. It seems as if males and females never do the same chores in our family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
88. Family members know who will agree and who will disagree with them on most family matters.
 1 2 3 4
 Never true Sometimes true Usually true Always true
89. My family could be happier than it is.
 1 2 3 4
 Never true Sometimes true Usually true Always true

90. There is strict punishment for breaking rules in our family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
91. We don't talk much to each other at home.
 1 2 3 4
 Never true Sometimes true Usually true Always true
92. For no apparent reason, family members seem to change their minds.
 1 2 3 4
 Never true Sometimes true Usually true Always true
93. We decide family matters together and personal matters by ourselves.
 1 2 3 4
 Never true Sometimes true Usually true Always true
94. Our family has a balance of closeness and separateness.
 1 2 3 4
 Never true Sometimes true Usually true Always true
95. Family members rarely say what they want.
 1 2 3 4
 Never true Sometimes true Usually true Always true
96. It seems there are always people around home who are not members of the family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
97. Certain family members order everyone else around.
 1 2 3 4
 Never true Sometimes true Usually true Always true
98. It seems as if family members can never find time to be together.
 1 2 3 4
 Never true Sometimes true Usually true Always true
99. People in our family get in lots of trouble if they do anything wrong.
 1 2 3 4
 Never true Sometimes true Usually true Always true
100. We know very little about the friends of other family members.
 1 2 3 4
 Never true Sometimes true Usually true Always true

101. Family members feel they have no say in solving problems.
 1 2 3 4
 Never true Sometimes true Usually true Always true
102. Members of our family share many interests.
 1 2 3 4
 Never true Sometimes true Usually true Always true
103. Our family is as well adjusted as any family in this world can be.
 1 2 3 4
 Never true Sometimes true Usually true Always true
104. Family members are encouraged to do their own thing.
 1 2 3 4
 Never true Sometimes true Usually true Always true
105. Family members never know how others are going to act.
 1 2 3 4
 Never true Sometimes true Usually true Always true
106. Certain individuals seem to cause most of our family problems.
 1 2 3 4
 Never true Sometimes true Usually true Always true
107. I don't think any family could live together with greater harmony than my family.
 1 2 3 4
 Never true Sometimes true Usually true Always true
108. It is hard to know what the rules are in our family because they always change.
 1 2 3 4
 Never true Sometimes true Usually true Always true
109. Family members find it hard to get away from each other.
 1 2 3 4
 Never true Sometimes true Usually true Always true
110. Family members feel that the family will never change.
 1 2 3 4
 Never true Sometimes true Usually true Always true
111. Family members feel they have to go along with what the family decides to do.
 1 2 3 4
 Never true Sometimes true Usually true Always true

APPENDIX C
AUXILIARY FORMS

Informed Consent

I understand that this is a study of how the members of my family see our family functioning. I understand that the members of my family will be asked to complete a questionnaire about what occurs in our family on a daily basis. I also understand that we will be asked to give information about the occupations and incomes of family members as well as whether they have been in therapy. This information will be confidential to the extent provided by law and no names will be used so that it will be anonymous.

I understand that there are no risks associated with this study and no direct benefits to my family for participating. It is agreed that the information may be used for educational purposes, which may include publication.

I have read the above description and my questions have been answered. I give my permission for the members of my family to participate.

I understand that we may withdraw from the study at any time if we no longer want to participate.

Signature of parent or guardian

If you would like
a copy of this
study, please put
your mailing address
here:

Signatures of others in family (optional)

Date

Signature of person obtaining
consent (witness)

Signature of person obtaining
consent (witness)

Instructions and Questions
For Therapists Administering FACES

Identification of family: _____

Therapist: _____

All family members who are 12 years or older should be asked to complete the FACES questionnaire. After these are done, one parent (or both) should complete the Demographic Information sheet. Please make sure that each person who completes the questionnaire is identified on that questionnaire.

1. Who was the identified patient when this family presented? If there was no one person singled out by the family, put none. _____
2. What was the presenting problem? _____
3. Which stage was this family in when they completed the questionnaire? (Check one)
 - _____ referred but not yet evaluated
 - _____ evaluation in process or completed
 - _____ being seen in psychotherapy
 - _____ therapy successfully completed
 - _____ therapy terminated without therapist's recommendation
 - _____ referred elsewhere after evaluation
4. If you did an initial evaluation, what was your recommendation? _____
5. Did the family follow through? _____
6. Had any member been in therapy before? If yes, state who and why. _____
7. Family cohesion is defined as: "The emotional bonding which members have toward one another and the individual autonomy that a person has in the family system." At the extreme of high family cohesion, there is an over-identification with the family which results in extreme bonding and limited individual autonomy. The low extreme is characterized by low bonding and high autonomy from the family. A balanced degree of family cohesion is thought to be the most conducive to effective family functioning and to facilitating individual development.

On this five-point scale, please rate this family's level of cohesion at the time they completed FACES.

1	2	3	4	5
too little cohesion		balanced		too much cohesion

8. Family adaptability is defined as: "The ability of a marital/family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stress." The assumption is that an adaptive system requires a balance between change and stability.

On this five-point scale, please rate this family's level of adaptability at the time they completed FACES.

1	2	3	4	5
too little change		balanced		too much change

9. Does any member of this family have a chronic illness?
Who and what? _____

Family Demographic Information

This form is to be completed by a parent. Please use first names only.

FIRST NAME	AGE	SEX	RACE	IS THIS PERSON LIVING AT HOME?	OCCUPATION	HIGHEST GRADE COMPLETED
(self)	_____	_____	_____	yes	_____	_____
(spouse)	_____	_____	_____	yes	_____	_____
your children	_____	_____	_____	yes	_____	_____
_____	_____	_____	_____	yes	_____	_____
_____	_____	_____	_____	yes	_____	_____
_____	_____	_____	_____	yes	_____	_____
_____	_____	_____	_____	yes	_____	_____
_____	_____	_____	_____	yes	_____	_____
others	_____	_____	_____	yes	_____	_____
_____	_____	_____	_____	yes	_____	_____
_____	_____	_____	_____	yes	_____	_____

Has your family or any member ever been seen by a counselor, therapist, psychologist or psychiatrist? ____yes ____no

Does any member of your family have a chronic illness for which they are under a doctor's care? If yes, which member and what illness? ____yes ____no

APPENDIX D
RESULTS OF FACTOR ANALYSES

First Factor Loadings of All Adaptability Items

<u>Item #</u>	<u>Factor Loading</u>	<u>Item #</u>	<u>Factor Loading</u>
2	-.61	65	.78
21	.57	83	.60
40	.54	101	.66
59	-.71	12	-.49
77	.25	31	.48
95	.63	50	.18
4	.13	69	-.56
23	-.43	87	.32
42	.08	105	.38
61	.09	15	-.69
79	-.54	34	-.08
97	.50	53	-.61
6	.52	72	.38
25	-.59	90	.02
44	-.38	108	.61
63	.33	17	.55
81	.43	36	-.01
99	.26	55	-.61
8	.35	74	-.67
27	-.74	92	.49
46	-.71	110	.19

First Factor Loadings (All Cohesion Items)

<u>Item #</u>	<u>Factor Loading</u>	<u>Item #</u>	<u>Factor Loading</u>
1	.56	66	-.69
20	.63	84	-.67
39	-.60	102	.72
58	-.62	11	.47
76	.47	30	-.09
94	.56	49	-.30
3	.01	68	.21
22	-.40	86	.56
41	.51	104	.35
60	-.63	13	.59
78	.33	32	-.72
96	-.00	51	.35
5	-.09	70	.60
24	.64	88	-.19
43	-.34	106	-.54
62	.65	16	-.37
80	.44	35	.63
98	-.64	54	.39
7	-.38	73	.31
26	.48	91	-.73
45	.16	109	-.33
64	.57	18	-.63
82	.39	37	-.60
100	-.49	56	.20
9	-.24	75	.32
28	.54	93	.14
47	.75	111	-.08

First Factor Loadings of 15 Retained Cohesion Items

<u>Item #</u>	<u>Factor Loading</u>	<u>Item #</u>	<u>Factor Loading</u>
20	-.64	66	-.76
39	.65	84	.73
58	.64	102	-.74
60	.65	35	-.57
24	-.66	91	.76
62	-.69	18	.65
98	.68	37	.65
47	-.76		

First Factor Loadings of 12 Retained Adaptability Items

<u>Item #</u>	<u>Factor Loading</u>	<u>Item #</u>	<u>Factor Loading</u>
2	.68	101	-.68
59	.76	15	.72
95	-.62	53	.59
27	.79	108	-.58
46	.76	55	.65
65	-.79	74	.69

First Factor Loading of 13 Retained Cohesion Items

<u>Item #</u>	<u>Factor Loading</u>	<u>Item #</u>	<u>Factor Loading</u>
76	.65	11	.61
3	.18	104	.39
5	.23	51	.38
24	.59	75	.55
80	.66	93	.31
45	.41	111	.35
64	.54		

First Factor Loading 15 Retained Adaptability Items

<u>Item #</u>	<u>Factor Loading</u>	<u>Item #</u>	<u>Factor Loading</u>
77	.24	99	.08
4	.41	31	.65
46	-.20	87	.29
61	.45	105	.43
44	-.14	72	.53
63	.58	108	.71
81	.63	17	.65
		92	.54

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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